

Claims:

1. A waste collection device, comprising:

a body including a housing defining an opening, said housing opening allowing an open end of an associated bag to be folded thereover and said housing receiving a closed end of said associated bag therein; and

5 a pulling mechanism connected to said body and removably connected to the associated bag for selectively pulling the associated bag into said housing.

2. The waste collection device of claim 1 wherein said pulling mechanism includes:

a spool rotatably connected to said body and removably connected to said associated bag; and

5 a driving mechanism connected to said spool for selectively rotating said spool such that the associated bag is wound on said spool thereby pulling said associated bag into said housing.

3. The waste collection device of claim 2 wherein said driving mechanism includes:

a motor for providing powered rotation to said spool; and

5 a means for selectively connecting output of said motor to said spool so the spool is rotated by said motor when said motor is actuated.

4. The waste collection device of claim 3 wherein a handle of said body includes a switch thereon that actuates said motor when depressed.

5. The waste collection device of claim 3 wherein said means for selectively connecting output of said motor to said spool includes:

a gear driven by said motor upon actuation of said motor;

5 a spool gear engaged with said gear, said spool gear mounted for corotation with said spool so that rotation of said spool gear by said gear rotates said spool in a first direction; and

means for disengaging said spool gear from said gear to allow manual rotation of said spool in a second direction.

6. The waste collection device of claim 5 wherein said spool gear is urged into engagement with said gear by a spring and said means for disengaging said spool gear from said gear comprises a knob that, upon application of sufficient force, overcomes the urging of said spring to displace said spool gear from 5 engagement with said gear.

7. The waste collection device of claim 5 wherein said spool gear is only engaged with said gear when a sufficient force is applied to a knob on said handle and said means for disengaging said spool gear from said gear comprises a spring that urges said gear away from said spool gear.

8. The waste collection device of claim 2 wherein said spool defines a bag attachment slot having a large diameter portion connected to a small diameter portion, said large diameter portion being appropriately sized to receive a balled end of the associated bag and said small diameter portion being appropriately sized to 5 hold onto the balled end when said spool is rotated in a first direction.

9. The waste collection device of claim 2 wherein said spool is removable from said body for attaching the associated bag to said spool.

10. The waste collection device of claim 1 wherein said pulling mechanism includes:

a carriage disposed on said body and slidable in relation to said opening, said carriage being removably connected to the associated bag; and

5 a driving mechanism connected to said carriage for selectively moving said carriage from a first position adjacent said opening to a second position spaced from said first position in a direction away from said opening to thereby pull the associated bag into said opening.

11. The waste collection device of claim 10 wherein said driving mechanism includes:

a motor for providing powered pulling of said carriage; and
a transmission assembly for converting rotational power from said motor to
5 linear movement of said carriage.

12. The waste collection device of claim 11 wherein said transmission assembly includes:

a connecting element connected at one end to said carriage; and
a spool rotatably connected to said body and rotatable by said motor to wind
5 said connecting element therearound and pull said carriage away from said opening.

13. The waste collection device of claim 10 further including:

a force transfer roller rotated by said motor upon actuation of said motor, said force transfer roller being frictionally engaged with said spool to rotate said spool;
and
5 means for disengaging said force transfer roller from said spool thereby allowing said spool to freely rotate.

14. The waste collection device of claim 13 wherein said force transfer roller is only engaged to said spool when a sufficient force is applied to a knob on said handle and said means for disengaging said force transfer roller from said spool comprises a spring that urges said force transfer roller away from said spool.

15. The waste collection device of claim 10 wherein said carriage includes a structure that removably connects to the associated bag, said structure includes at least one of (1) a post for being received in an aperture of the associated bag and (2) a slot for receiving a balled end of the associated bag.

16. The waste collection device of claim 1 wherein the pulling mechanism includes:

a motor removably connected to the associated bag for pulling the associated bag into said opening upon actuation of said motor.

17. The waste collection device of claim 16 further including:

one or more batteries operatively received in one of a handle mounted to said housing and said housing for providing power to said motor.

18. The waste collection device of claim 1 further comprising a handle mounted to said housing.

19. The waste collection device of claim 18 wherein said handle is a telescoping handle movable between a telescopingly folded-down position and a telescopingly extended position.

20. The waste collection device of claim 18 wherein said housing includes a base portion and said handle is pivotally attached to said base portion so that said handle is foldable into said base portion for compact storage.

21. The waste collection device of claim 20 wherein said housing is defined by said base portion and a frame pivotally mounted adjacent a forward end of said base portion, wherein in an open position said frame and said base portion together define said opening and in a closed position said frame pivots around said base portion for compact storage.

22. The waste collection device of claim 20 wherein said base portion includes a lower wall and a pair of spaced apart side walls extending upward from said lower wall, and wherein said handle is foldable against said lower wall.

23. The waste collection device of claim 1 further including:
a door movable between an open position and a closed position wherein the door closes said opening and pinches the associated bag received in said opening closed.

24. The waste collection device of claim 1 wherein said housing includes:
a main housing; and
a housing attachment that is removable from said main housing portion.

25. The waste collection device of claim 1 further comprising a light source connected to said housing and positioned for providing light adjacent said opening of said housing.

26. The waste collection device of claim 25 further including a switch for selectively actuating said light source.

27. The waste collection device of claim 1 further including:
a storage compartment on said body for holding a supply of the associated bags.

28. A waste collection device, comprising:
a body including a housing portion defining an opening;
a liner bag having a closed end and an open end, said closed end being received in said opening and said open end being folded over said housing portion
5 opening; and

a spool rotatably connected to said body and removably connected to said closed end of said liner bag, wherein a rotation of said spool in a first direction pulls said liner bag into said opening.

29. The waste collection device of claim 28 further including:

a motor mounted to said body and operatively connected to said spool for powered rotation of said spool in said first direction; and

a switch for actuating said motor.

30. The waste collection device of claim 29 further comprising a first knob which activates said switch and connects said motor to said spool upon application of a sufficient force thereto so that said motor rotates said spool.

31. The waste collection device of claim 30 further including:

a second knob for disconnecting said spool from said motor upon application of a sufficient force thereto so that said spool is freely rotatable in a second direction.

32. The waste collection device of claim 28 further including:

a carriage to which said closed end of said liner bag is attached;

a connecting element connecting said carriage to said spool, said connecting element winding on said spool when said spool is rotated in said first direction
5 thereby pulling said carriage away from said opening.

33. The waste collection device of claim 28 wherein said liner bag includes a sheet secured at said closed end of said liner bag.

34. The waste collection device of claim 33 wherein said sheet comprises an absorbent material for absorbing liquids.

35. The waste collection device of claim 28 further including:

a roll of liner bags rotatably connected to said body, said liner bag being attached to said roll of liner bags so that upon disposal of a first of said liner bags a second liner bag from said roll of liner bags is readily usable.

36. A waste collection device, comprising:

a body defining an opening;

a liner having a closed end received in said opening and an open end received about said body adjacent said opening;

5 a spool rotatably mounted in said body and connected to said liner so that upon rotation of said spool in a first direction said liner is pulled into said body; and

a motor mounted to said body and selectively connected to said spool for powered rotation of said spool in said first direction.

37. The waste collection device of claim 36 wherein at least one wheel is rotatably mounted to said body for facilitating movement of said body on a surface.

38. A method of collecting waste comprising:

providing a housing with an opening and a pulling mechanism located in the opening;

5 mounting a liner bag having a closed end and an open end to said body such that said bag closed end is located in said opening;

connecting the bag closed end with the pulling mechanism;

folding said bag open end over said body opening;

positioning the bag open end adjacent waste material meant to be collected, the waste material being located on a surface;

10 pulling the bag further into the housing with the pulling mechanism; and

simultaneously transferring the waste material from the surface into the bag.

39. The method of claim 38 further comprising the steps of:

detaching the bag closed end from the pulling mechanism; and

removing the bag from the housing.